

LISTING OF CLAIMS

1-123. (Cancelled)

124. (Currently Amended)

A method of producing multiple embryos from ~~multiple female bovine mammals~~
a female bovine mammal comprising:

- a. creating superovulation in said ~~multiple female bovine mammals~~ female bovine mammal to create at least two eggs in ~~each of said female bovine mammals~~ said female bovine mammal comprising the step of using an ovulatory pharmaceutical to cause multiple eggs to be produced in ~~each of said female bovine mammals~~ said female bovine mammal further comprising the steps of:
 - i) injecting a dosage of follicle stimulating hormone in ~~each of said female bovine mammals~~ said female bovine mammal a plurality of times a day;
 - ii) administering said dosage of follicle stimulating hormone with prostaglandin F-2-alpha;and wherein said step of injecting said dosage of follicle stimulating hormone in ~~each of said female bovine mammals~~ said female bovine mammal a plurality of times a day comprises injecting said follicle stimulating hormone in approximately half day increments at a dosage level of 6, 6, 4, 4, 2, 2, 2, and 2 mg between days 9 and 12 inclusive of the estrus cycle and wherein administering said dosage of follicle stimulating hormone with prostaglandin F-2-alpha comprises supplementing 25 and 12.5 mg of prostaglandin F-2-alpha on the sixth and seventh dosages, respectively, of said follicle stimulating hormone;
- b. collecting sperm cells from at least one male bovine mammal;
- c. staining said collected sperm cells with Hoechst 33342;

- d. sorting said stained sperm cells with a flow cytometer at a rate of ~~about~~ in the range of 92 to 800 live sperm of each sex per second to yield sperm cells of a desired sex;
- e. concentrating said sperm cells of a desired sex to a concentration of ~~about~~ 3.36×10^6 in the range of 1.6×10^6 to 5×10^6 sperm per milliliter;
- f. ~~establishing multiple insemination samples, each having a volume of about 184 microliters, and each having about 618,240 of said an~~ establishing an insemination sample having in the range of 1×10^5 to 2×10^6 sperm cells of a desired sex;
- g. ~~inserting at least one said insemination sample into each said female bovine mammal~~ said female bovine mammal, half the dose into each uterine horn of said female bovine mammal, 20 to 24 hours post-onset of estrus for said female bovine mammal;
- h. fertilizing a plurality of said eggs in ~~each of up to 75% of said multiple female bovine mammals~~ said female bovine mammal; and
- i. producing at least two embryos of a desired sex from ~~each of said female bovine mammals~~ said female bovine mammal in which a plurality of said eggs were fertilized.

125-132. (Cancelled)

133. (Currently Amended)

A method of producing multiple embryos from ~~multiple female bovine mammals~~ a female bovine mammal as described in claim 124 and further comprising the step of separating sperm cells based on the amount of nuclear DNA each said sperm cell contains.

134-135. (Cancelled)

136. (Currently Amended)

A method of producing multiple embryos from ~~multiple female bovine mammals~~ a female bovine mammal as described in claim 124, further comprising the step of allowing at least one said embryo to develop into an animal of a desired sex.

137-138. (Cancelled)

139. (Currently Amended)

A method of producing multiple embryos from ~~multiple female bovine mammals~~ a female bovine mammal as described in claim 124, further comprising chemically coordinating a sheath fluid to create a sheath fluid environment for said cells which is coordinated with both a pre-sort and a post-sort cell fluid environment.

140. (Currently Amended)

A method of producing multiple embryos from ~~multiple female bovine mammals~~ a female bovine mammal as described in claim 139, wherein chemically coordinating a sheath fluid to create a sheath fluid environment for said cells which is coordinated with both a pre-sort and a post-sort cell fluid environment comprises establishing a sheath fluid which contains citrate.

141. (Currently Amended)

A method of producing multiple embryos from ~~multiple female bovine mammals~~ a female bovine mammal as described in claim 124, further comprising collecting said sperm cells of a desired sex and cushioning said sperm cells of a desired sex from impact with a collection container which has a wide opening.

142-143.(Cancelled)